*This two part project investigates the effect fertilizers have on the wildlife in the Chesapeake Bay.*

**Part 1 DUE: \_\_\_\_\_\_\_\_\_\_\_\_**

The Whoas of H-2-O Lab.

**Part 2 DUE: \_\_\_\_\_\_\_\_\_\_\_\_**

**G**oal – Your goal is acquire the proper spill cleanup, get treatment for the marine life and wildlife affected by the contamination, and to prevent future spills in the area.

**R**ole – You will be taking the role of a local environmental chemist.

**A**udience – Your audience is the DEQ, the Virginia Department of Environmental Quality.

**S**ituation – On November 12, 2010, a liquid fertilizer tank burst along the Elizabeth River in Chesapeake, Virginia. The main component in liquid fertilizer is Ammonia, which is very toxic to the environment. For example, Ammonia can cause algae blooms in any body of water. Your challenge is to receive assistance with cleaning up the spill, helping affected marine and wildlife, and preventing future spills.

**P**roduct – Your product is a short 1-2 minute video that clearly and concisely explains your knowledge of the toxicity of Ammonia and its effects on the environment. You will email the video to me via Edmodo.

**S**tandards - Your video should include the following:

-Information on Ammonia and its effect on the environment (*hint* – focus on algae blooms and the resulting devastation)

-Explain what happens chemically when Ammonia reaches water

-Give details about Ammonia’s effect on the environment including: wetlands, fish, crabs, etc.

-Expand on other types of chemical spills, such as phosphate spills from laundry detergents seeping into the groundwater

-Information necessary for the proper spill cleanup and treatment for the marine life and wildlife affected

-Give two examples of ways to prevent future spills

Before you turn in your video, please grade your own work with the attached rubric. Be honest and support your decision with a 1 – 2 sentence explanation of how you came up with the grade you did. Good luck!!

Websites chosen for you by the FC Librarians:

* Go to the student shortcuts folder on the desktop
* Click the Destiny link
* Click “Thompson” on the left under “Class Visits”

More Website Ideas:

* Lynnhaven River NOW Project: <http://www.lynnhavenrivernow.org/>
* Elizabeth River Project: <http://www.elizabethriver.org/>
* Chesapeake Bay Foundation: <http://www.cbf.org/>
* <http://www.eco-check.org/reportcard/chesapeake/2010/summaries/elizabeth_river/>
* Gale: Science Resource Center
* Proquest: eLibrary Science (on-line)

Biomimicry Info:

* <http://www.biomimicrynews.com/tags/oysters.asp>
* <http://www.biomimicrynews.com/tags/>

Search Word Ideas:

* Fertilizer
* Water Pollution
* Argochemicals
* Environmental Science
* Water Quality
* Algae
* Chesapeake Bay
* Elizabeth River
* Lynnhaven River

**Extensions/Other References**

English Class:

* *Love Canal* – Hooker Chemical sold a sight to the Niagara Falls School Board knowing that the area was contaminated with toxic waste. People in the area were having health issues and birth defects.

History Class:

* *Minamata Bay, Japan* – Mercury poisoning from plastics manufacturer dumping 27 tons of methylmercury into the Bay over a period of 37 years
* *Erin**Brockovich* – Built a case against the Pacific Gas and Electric Company (without any legal education) for contamination of drinking water with hexavalent chromium (chromium VI); which caused many health issues for Hinkley residents.
* *Great Pacific Garbage Patch* – massive collections of trash, especially plastics, float around the Pacific Ocean harming all sealife who becomes tangled in the trash or mistakenly eats the trash.